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EXAMINER	
SHEW, JOHN	
ART UNIT	**PAPER NUMBER**
2664	

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	10/092,289	MOTT, JAMES A.
	Examiner	Art Unit
	John L. Shew	2664

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *05 March 2002*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☐ Claim(s) _____ is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-24,26-64* is/are rejected.

7)☒ Claim(s) *25* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 2, 3, 4, 5, 6, 7, 9, 10, 11, 13, 14, 15, 16, 17, 18, 19, 20, 21, 23, 24, 26, 27, 30, 32, 35, 36, 37, 38, 39, 41, 47, 50, 56, 57, 58, 62, 63, 64 are rejected under 35 U.S.C. 102(b) as being anticipated by Cidon et al. (Patent No. 5367517).

Claim 1, Cidon teaches a method of dynamically controlling the rate of communication between two entities (Abstract lines 1-8) referenced by the bandwidth reservation between a source node and a destination node, comprising receiving an electronic communication (col. 2 lines 8-13) referenced by the transmission of a request packet from a source node to a destination node, for a first channel between a first entity and a second entity (Fig. 1, col. 2 lines 50-67, col. 3 lines 1-22) referenced by the Automatic Network Routing link 5 between Node 0 and Node 3, at a relay element situated between the first entity and the second entity (Fig. 1, col. 3 lines 23-37) referenced by intermediate Node 1 located between Node 0 and Node 3, retrieving from said

communication a first value associated with a first target bandwidth for said first channel (Fig. 1, Fig. 2B, Fig. 3A) referenced by the Bandwidth Allocation Device receiving the bandwidth B_max value, determining whether said relay element can provide said first target bandwidth for said first channel (col. 3 lines 38-48) referenced by the determination if the ANR link 5 can support a bandwidth greater than B_min but less thatn B_max, and modifying said first value in said communication if said relay element cannot provide said first target bandwidth for said channel (col. 33 lines 38-48) referenced by the BAD for outgoing ANR link 5 replacing the B_max in the reservation request packet with B_maxn1 wherein B_maxn1 is the maximum bandwidth of Node 1.

Claim 2, Cidon teaches further comprising forwarding said communication (Fig. 1, Fig. 2B, col. 4 lines 13-16) referenced by Node 1 sending a outgoing ANR link 12 with a non-zero bandwidth request to Node 2, wherein said first value in said forwarded communication indicates a bandwidth allocated to said first channel by said relay element (Fig. 1, Fig. 3B, col. 6 lines 51-67, col. 7 lines 1-5) referenced by the reservation request packet with the bandwidth modification of B(0)=B_0 sent over the ANR link 12 by Node 1.

Claim 3, Cidon teaches further comprising prior to said determining receiving a set of communications on a set of channels through said switching element not including said first channel (Fig. 4, Fig. 6, col. 9 lines 51-67, col. 10 lines 19-24) referenced by the Node 24 equivalent to Node 1 receiving multiple bandwidth request packets for route

links 34 38 62 and links 42 38 72 70 68 66 each representing different set of channels, retrieving from said set of communications a set of values associated with target bandwidths for said set of channels (Fig. 3B) referenced by the bandwidth request packet for each respective route inclusive of the bandwidth B_max value, and summing said target bandwidths to calculate a total allocated bandwidth for said relay element (Fig. 7, col. 10 lines 25-42) referenced by the Compare Request With Available Resources Step 724 to calculate the available bandwidth.

Claim 4, Cidon teaches wherein said determining comprises comparing said total allocated bandwidth to a maximum bandwidth of said relay element (Fig. 7, col. 10 lines 25-42) referenced by the Receive Request Packet At A Node Step 720 which includes the bandwidth B_max value and Compare Request With Available Resources Step 724 which is the total available bandwidth of the node, and if said maximum bandwidth exceeds said total allocated bandwidth by a difference of more than said first target bandwidth (Fig. 7, col. 10 lines 25-42) referenced by result of Step 724 Available Resources >= Request, determining that said relay element can provide said first target bandwidth for said first channel (Fig. 7, col. 10 lines 25-42) referenced by Decrease Available Resource By Request Step 726 wherein the node provides the target bandwidth by reducing its total available bandwidth resources.

Claim 5, Cidon teaches wherein said determining comprises comparing said first target bandwidth for said first channel to a previous bandwidth granted to said first channel by

said relay element (col. 3 lines 38-48) referenced by the comparison of target bandwidth B_maxn1 being greater than previous bandwidth B_min which is the minimum bandwidth which must be granted to allow for data transmission, and if said first target bandwidth is greater than said previous bandwidth comparing a difference between said first target bandwidth and said previous bandwidth with an unallocated bandwidth of said relay element (Fig. 7, col. 10 lines 25-42) referenced by Compare Request With Available Resources Step 724 followed by Decrease Available Resource By Request Step 726 wherein the node provides the target bandwidth by reducing its unallocated available bandwidth resources.

Claim 6, Cidon teaches wherein said modifying comprises changing said first value to a value associated with zero bandwidth (col. 3 lines 49-62) referenced by the determination if the bandwidth of at least B_min cannot be supported then the Bandwidth Allocation Device replaces the B_max value with 0.

Claim 7, Cidon teaches wherein said communication includes said first value and a second value associated with a requested bandwidth for said first channel (Fig. 3A, col. 6 lines 32-50) referenced by the first bandwith B_max value and the second bandwidth B_min value associated with the ANR link 5, and wherein said first value is modifiable and said second value is not modifiable (col. 3 lines 38-48) referenced by the modification of B_max by the replacement of the B_max value with B_maxn1 and

wherein B_min cannot be modified since it is a lower limit restriction required for bandwidth comparison.

Claim 9, Cidon teaches wherein said electronic communication is a packet (col. 2 lines 8-13) referenced by the transmission of a request packet from a source node to a destination node.

Claim 10, Cidon teaches wherein said relay element is a switch (Fig. 1, col. 1 lines 35-42) referenced by the switching node between the source and the destination nodes, and wherein said first entity and said second entity are computer systems (Fig. 1, col. 9 lines 41-50) referenced by the use of computer communications for routing methods thus the nodes are computer based.

Claim 11, Cidon teaches wherein one of said first entity and said second entity is a computer system (Fig. 1, col. 9 lines 41-50) referenced by the use of computer communications for routing methods thus the nodes are computer based, and wherein the other of said first entity and said second entity is an input/output subsystem (Fig. 2B, col. 3 lines 13-22) referenced by the nodes each receiving input data and a Bandwidth Allocation Device for output data.

Claim 13, Cidon teaches a method of dynamically controlling the rate of communication between two entities (Abstract lines 1-8) referenced by the bandwidth reservation

between a source node and a destination node, comprising generating at a first entity a first electronic communication to a second entity (col. 2 lines 8-13) referenced by the transmission of a request packet from a source node to a destination node, over a first communication channel (Fig. 1, col. 2 lines 50-67, col. 3 lines 1-22) referenced by the Automatic Network Routing link 5 between Node 0 and Node 3, wherein said first communication includes a first value indicating a target rate of communication for said channel (Fig. 3A, col. 6 lines 32-50) referenced by the bandwidth request packet the bandwidth B_max value for Automatic Network Routing link 5, receiving said first communication at a switching element (Fig. 2B) referenced by Node 1 receiving the bandwidth request packet at ANR 5, determining whether said switching element can provide said first target rate of communication (col. 3 lines 38-48) referenced by the determination if the ANR link 5 can support a bandwidth greater than B_min but less thatn B_max, altering said first value to indicate a lower target rate of communication for said first channel (col. 3 lines 38-48) referenced by the BAD for outgoing ANR link 5 replacing the B_max in the reservation request packet with B_maxn1 wherein B_maxn1 is the maximum bandwidth of Node 1, receiving said first communication at said second entity (Fig. 1, col. 5 lines 57-67, col. 6 lines 1-7) referenced by the bandwidth request packet arriving at Node 3, and communicating said first value to said first entity (Fig. 3I, col. 6 lines 1-7) referenced by the bandwidth reply packet with a B_max value sent back to Node 0.

Claim 14, Cidon teaches further comprising determining whether said switching element previously allocated a rate of communications to said first channel (Fig. 7, col. 10 lines 25-42) referenced by Compare Request With Available Resources Step 724 in which previously allocated bandwidth are grouped with the unavailable bandwidth.

Claim 15, Cidon teaches further comprising after said communicating transmitting one or more communication from said first entity toward said second entity at said lower target rate of communication (Fig. 3D, col. 7 lines 22-39) referenced by the bandwidth request packet with B_max reduced from value 0 to value 0/2 to support ANR link 16 arriving at Node 3.

Claim 16, Cidon teaches wherein said generating comprises storing said first value in said first communication prior to transmitting it over said first channel (Fig. 1, Fig. 3A, col. 6 lines 32-50) referenced by the creation of the bandwidth request packet for ANR link 5 with the B_max value which requires storing the B_max value within Node 0 in order to create the packet.

Claim 17, Cidon teaches wherein sid generating further comprises storing a second value in said first communication and wherein said second value indicates a requested rate of communication for said channel (Fig. 1, Fig. 3A, col. 6 lines 32-50) referenced by the creation of the bandwidth request packet for ANR link 5 with the B_min value which requires storing the B_min value within Node 0 in order to create the packet.

Claim 18, Cidon teaches wherein said first value is equal to said second value (col. 2 lines 50-58) referenced by the note that B_min may equal B_max.

Claim 19, Cidon teaches wherein one or more of said first value and said second value comprises a threshold value indicating a maximum rate of communication (col. 2 lines 50-66) referenced by bandwidth B_max value which is a maximum data rate.

Claim 20, Cidon teaches wherein one or more of said first value and said second value comprise a threshold value indicating a minimum rate of communication (col. 2 lines 50-66) referenced by bandwidth B_min value which is a minimum data rate.

Claim 21, Cidon teaches further comprising at said switching element detecting said threshold value indicating said minimum rate of communication and tearing down said channel (col. 3 lines 49-62) referenced by if the ANR link cannot support the bandwidth B_min the B_max value is replaced by 0 which de-allocates the bandwidth reserved by the Bandwidth Allocation Device which effectively tears down the channel.

Claim 23, Cidon teaches wherein said determining comprises determining whether a maximum rate of communication of said switching element has been allocated (Fig. 7, col. 10 lines 25-42) referenced by the Compare Request With Available Resources Step 724 to calculate the available bandwidth, and if said maximum rate has not been

allocated identifying an available rate of communication of said switching element (Fig. 7, col. 10 lines 25-42) referenced by the Decrease Available Resources By Request Step 726 which reduces the available communication rate by the B_max value of the packet request.

Claim 24, Cidon teaches wherein said identifying comprises (a) receiving a communication prior to said first communication at said switching element on a channel other than said first channel (Fig. 2B, Fig. 7 col. 10 lines 25-42) referenced by a bandwidth request packet for ANR link 2 instead of ANR link 5, (b) allocating a portion of a maximum rate of communication of said switching element to said other channel (Fig. 7 col. 10 lines 25-42) referenced by the Decrease Available Resources By Request Step 726, (c) repeating steps (a)-(b) (Fig. 7 col. 10 lines 25-42) referenced by Receive Request Packet At A Node Step 720 for each ANR link connected to Node 1 including ANR link 12 and ANR link 21, (d) summing said rates of communication allocated to said other channels to determine a total allocated rate of communication (Fig. 7 col. 10 lines 25-42) referenced by Compare Request With Available Resource Step 724 to determine resource availability based on priorly assigned total channel resources allocated, and (e) determining the different between said maximum rate of communication and said total allocated rate of communication (col. 3 lines 38-48) referenced by the determination of B_max > B_maxn1 > B_min wherein the B_maxn1 is the total available bandwidth which can be allocated thus the difference between the requested B_max and B_maxn1 must be calculated.

Claim 26, Cidon teaches wherein said altering comprises setting said first value to a threshold value indicating a minimum rate of communication (col. 3 lines 49-62) referenced by the determination of B_max to a minimum threshold value of zero for the bandwidth when the bandwidth supported cannot exceed B_min.

Claim 27, Cidon teaches further comprising at said first entity after said communicating ceasing transmission of communications to said second entity over said first channel (Fig. 1, col. 3 lines 49-62) referenced by the deallocation of the bandwidth reserved by a Bandwidth Allocation Device which ceases data transmission over ANR link 5 between Node 0 and Node 3.

Claim 30, Cidon teaches wherein said first value is a measure of bandwidth (Fig. 3A, col. 6 lines 32-50) referenced by the bandwidth request packet the bandwidth B_max value for Automatic Network Routing link 5.

Claim 32, Cidon teaches a method of controlling a network communication rate (Abstract lines 1-8) referenced by the bandwidth reservation between a source node and a destination node, comprising receiving at an intermediate node coupling a first network node and a second network node (Fig. 1, col. 2 lines 50-67, col. 3 lines 1-22) referenced by the bandwidth request packet from Node 0 to Node 3 via intermediate Node 1, a rate value representing a rate of communication between the first network

node and the second network node (Fig. 1, Fig. 2B, Fig. 3A) referenced by the Bandwidth Allocation Device at Node 1 receiving the bandwidth B_max value, and if the intermediate node cannot conduct communications between the first network node and the second network node at said rate value (col. 3 lines 38-48) referenced by the B_maxn1 value of Node 1 for ANR link 5 which is less than the B_max value, decreasing said rate value such that the intermediate node can conduct communications between the first network node and the second network node at said rate value (col. 3 lines 38-48) referenced by the replacement of the B_max value by the B_maxn1 value in the bandwidth request packet before forwarding the packet on the path.

Claim 35, Cidon teaches wherein if said rate value is decreased to a first value the first network node stops sending communications toward the second network node through the intermediate nod (Fig. 1, col. 3 lines 49-62) referenced by the decrease of the bandwidth B_max to a value of zero wherein Node 1 will deallocate the bandwidth reserved by a Bandwidth Allocation Device which ceases data transmission over ANR link 5 between Node 0 and Node 3.

Claim 36, Cidon teaches wherein if said rate value received at the intermediate hode has a second value (Fig. 1, col. 2 lines 50-58, col. 3 lines 38-48) referenced by the second bandwidth value B_min received at Node 1, the first network node sends communications toward the second network node through the intermediate node at a

maximum rate (Fig. 1, col. 2 lines 50-58) referenced by where B_max equals B_min thus the transmission rate is set to the maximum rate through the intermediate Node 1 between Node 0 and Node 3.

Claim 37, Cidon teaches further comprising notifying the first network node of said decreased rate value wherein the first network node then transmits communications toward the second network node at said decreased rate value (col. 5 lines 21-39) referenced by the bandwidth reply packet back to the source Node 0 with a modified B_max as the maximum bandwidth transmission rate between Node 0 and Node 3.

Claim 38, Cidon teaches wherein said rate value is a target rate value (col. 3 lines 38-48) referenced by the bandwidth B_max value of the bandwidth request packet to which Node 1 determines if the bandwidth can be supported.

Claim 39, Cidon teaches further comprising receiving at the intermediate node from the first network node (Fig. 1, col. 2 lines 50-67, col. 3 lines 1-22) referenced by the bandwidth request packet from Node 0 to Node 3 via intermediate Node 1, a requested rate value representing a requested rate of communication between the first network node and the second network node (Fig. 1, Fig. 2B, Fig. 3A) referenced by the Bandwidth Allocation Device at Node 1 receiving the bandwidth B_max value as the requested bandwidth between Node 0 and Node 3.

Claim 41, Cidon teaches wherein the intermediate node is a switch (Fig. 1, col. 1 lines 35-42) referenced by the switching node between the source and the destination nodes.

Claim 47, Cidon teaches wherein the intermediate node is a computer (Fig. 1, col. 9 lines 41-50) referenced by the use of computer communications for routing methods thus the nodes are computer based.

Claim 50, Cidon teaches a method of controlling a network traffic rate (Abstract lines 1-8) referenced by the bandwidth reservation between a source node and a destination node, comprising sending a rate value from a first network node toward a second network node (Abstract lines 1-8, Fig. 3A, col. 6 lines 32-50) referenced by the bandwidth request packet sent from the source node to the destination node which includes the bandwidth B_max value, wherein said rate value represents a rate of traffic between the first network node and the second network node (Abstract lines 1-8, Fig. 3A, col. 6 lines 32-50) referenced by the bandwidth request packet sent from the source node to the destination node which includes the bandwidth B_max value, at one or more intermediate nodes between the fist network node and the second network node (Fig. 1, col. 2 lines 50-60) referenced by intermediate nodes Node 1 and Node 2 between source node Node 0 and destination node Node 3, receiving said rate value (Fig. 2B) referenced by Node 1 receiving the bandwidth request packet at ANR 5, if the intermediate node cannot communicate traffic between the first network node and the second network node at said rate value (col. 3 lines 38-48) referenced by the

determination if ANR link 5 can support the bandwidth B_max value, decreasing said rate value to a value at which the intermediate node can communicate traffic between the first network node and the second network node (col. 3 lines 38-48) referenced by the BAD for ANR link 5 replacing the B_max in the reservation request packet with B_maxn1 wherein B_maxn1 is the maximum bandwidth of Node 1 for ANR link 5, forwarding said rate value toward the second network node (col. 3 lines 38-48) referenced by the passing of the reservation request packet to forward on the path, and communicating between the first network node and the second network node at said rate value (col. 9 lines 23-40) referenced by the bandwidth reply packet back to the source node Node 0 to establish the bandwidth B_max value between Node 0 and Node 3 throughout the paths.

Claim 56, Cidon teaches a network node for dynamically controlling the rate of communication between two entities (Abstract lines 1-8) referenced by the bandwidth reservation between a source node and a destination node via an intermediate node, comprising a communication port configured to conduct communications from a first network node toward a second network node (Fig. 1, col. 2 lines 50-60, Fig. 2B, col. 3 lines 13-22) referenced by the Node 1 links ANR 5 ANR 12 ANR 2 and ANR 21 which are ports using Bandwidth Allocation Devices to transmit/receive the bandwidth request/reply packets between source node Node 0 and destination node Node 3, and logic coupled to said communication port (Fig. 7, col. 2 lines 43-45) referenced by the flowchart logic of processing the bandwidth request packet, wherein said logic is

configured to identify a rate value representing a rate of communication between the first network node and the second network node (Fig. 3A, Fig. 7) referenced by the Receive Request Packet At A Node Step 720 which receives the bandwidth request packet including the bandwidth B_max value, wherein said rate value was originated by the first network node (Fig. 3A, col. 6 lines 32-50) referenced by the source node Node 0 generation of the bandwidth request packet, and decrease said rate value if the network node cannot conduct communications between the first network node and the second network node at the rate value (col. 3 lines 38-48) referenced by the determination by Node 1 if ANR link 5 can support a bandwidth greater than B_min but less than B_max such as B_maxn1 thereby replacing the B_max value by the B_maxn1 value.

Claim 57, Cidon teaches an apparatus for dynamically adjusting the rate of communications between a first entity and a second entity on a channel (Abstract lines 1-8, Fig. 1) referenced by the bandwidth reservation processing by an intermediate node between a source node and a destination node over ANR link 5, comprising a communication port configured to forward a communication received from a first entity toward a second entity on a communication channel (Fig. 1, col. 2 lines 50-60, Fig. 2B, col. 3 lines 13-22) referenced by the Node 1 link ANR 5 which is a port using Bandwidth Allocation Devices to transmit/receive the bandwidth request/reply packets between source node Node 0 and destination node Node 3, a first memory configured to store said communication (Fig. 3A, col. 6 lines 32-50) referenced by the bandwidth request

packet received from Node 0 to Node 1 such that the fields and parameter must be stored by Node 1 for processing, a second memory configured to store a target bandwidth for said channel wherein said target bandwidth is indicated by a first value in said communication (Fig. 3B, col. 6 lines 51-66) referenced by the bandwidth request packet with the tenth element of the bandwidth B(0)=B_0 which is the target bandwidth provided by Node 1, a comparator configured to compare said target bandwidth to an available bandwidth for said port (Fig. 7, col. 10 lines 25-42) referenced by Compare Request With Available Resources Step 724 which compares the available bandwidth with the requested bandwidth, and a processor configured to adjust said first value to indicate a different target bandwidth (Fig. 7, col. 10 lines 25-42) referenced by Decrease Available Resources By Request Step 726 which adjust B_max to the available bandwidth.

Claim 58, Cidon teaches further comprising an extractor configured to extract said first value from said communications (Fig. 2B, col. 3 lines 13-20, Fig. 3A, col. 6 lines 32-50) referenced by the Bandwidth Allocation Device which processes the bandwidth request packet to obtain the B_max value.

Claim 62, Cidon teaches wherein said extractor is further configured to retrieve a second value from said communication wherein said second value indicated a requested bandwidth for said channel (Fig. 2B, col. 3 lines 13-20, Fig. 3A, col. 6 lines

32-50) referenced by the Bandwidth Allocation Device which processes the bandwidth request packet to obtain the B_min value.

Claim 63, Cidon teaches wherein said processor is configured to adjust said first value to indicate a lower target bandwidth if said apparatus is unable to profide said target bandwidth (col. 3 lines 38-48) referenced by the replacement of the B_max value by the B_maxn1 value if the B_max value cannot be supported.

Claim 64, Cidon teaches a communication system configured for dynamic rate flow control between two communicating devices (Abstract lines 1-8) referenced by the bandwidth reservation between a source node and a destination node, comprising a first device configured to generate a communication for transmission toward a second device over a first channel (Fig. 1, col. 2 lines 8-13 lines 50-67) referenced by the transmission of a bandwidth request packet from a source node Node 0 to a destination node Node 3 over ANR link 5, wherein said communication includes a first value indicating a target bandwidth for said first channel (Fig. 3A, col. 6 lines 32-50) referenced by the bandwidth request packet including the bandwidth B_max value associated with ANR link 5, a switch element configured to receive said communication and direct said communication toward said second device (Fig. 1, Fig. 2B) referenced by Node 1 which is an intermediate node processing the bandwidth request packet between Node 0 and Node 3, wherein said switch element alters said first value if said switch element cannot provide said target bandwidth for said first channel (col. 3 lines

38-48) referenced by the replacement of the B_max value by the B_maxn1 value if the B_max value cannot be support by Node 1 for ANR link 5, and second device configured to receive said communication and report said first value to said first entity (Fig. 3F, col. 8 lines 12-39) referenced by the bandwidth reply packet generated by Node 3 back to Node 0 to establish the B_max value for data transmission.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 8, 22, 28, 29, 33, 34, 59, 60, 61 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cidon as applied to claims 1-7, 13-21, 32 above, in view of Gubbi (Patent No. US 6934752).

Claim 8, Cidon teaches a method of bandwidth reservation using bandwidth B_max values between link entities. Cidon does not teach the first value is a time value

representing a time between communication transmissions from the first entity to the second entity on said first channel.

Gubbi teaches a first value is a time value representing a time between communication transmissions from the first entity to the second entity on said first channel (Fig. 32, col. 37 lines 14-25) referenced by the Dynamic Bandwidth Request including a Latency Request 322 expressed in Time Unit microseconds.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the Dynamic Bandwidth Request message of Gubbi to the bandwidth reservation method of Cidon for the purpose of dynamically negotiating for the priority bandwidth and the retransmission parameters for each stream separately to optimize network capacity as suggested by Gubbi (col. 6 lines 7-11).

Claim 22, Cidon teaches wherein one or more of said first value and said second value comprises a bandwidth (col. 2 lines 50-57) referenced by the bandwidths B_max and B_min. Cidon does not teach one or more of said first value and said second value comprises a time period representing a delay between transmission of successive communications over said first channel from said first entity.

Gubbi teaches one or more of said first value and said second value comprises a time period representing a delay between transmission of successive communications over said first channel from said first entity (Fig. 32, col. 14-25) referenced by the Dynamic Bandwidth Request including a Latency Request 322 expressed in Time Unit microseconds, and wherein said rate of communication indicated by said time period is

substantially equal to the inverse of said time period (Fig. 32, col. 37 lines 14-25) referenced by the Dynamic Bandwidth Request including Total Bandwidth Request 321 in bytes per second corresponding to the Latency Request.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the Dynamic Bandwidth Request message of Gubbi to the bandwidth reservation method of Cidon for the purpose of dynamically negotiating for the priority bandwidth and the retransmission parameters for each stream separately to optimize network capacity as suggested by Gubbi (col. 6 lines 7-11).

Claim 28, Cidon teaches a method of bandwidth reservation using bandwidth B_max values between link entities. Cidon does not teach the first value is a time period between successive electronic communication transmissions from the first entity on said first channel.

Gubbi teaches a first value is a time period between successive electronic communication transmissions from the first entity on the first channel (Fig. 32, col. 37 lines 14-25) referenced by the Dynamic Bandwidth Request including a Latency Request 322 expressed in Time Unit microseconds.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the Dynamic Bandwidth Request message of Gubbi to the bandwidth reservation method of Cidon for the purpose of dynamically negotiating for the priority bandwidth and the retransmission parameters for each stream separately to optimize network capacity as suggested by Gubbi (col. 6 lines 7-11).

Claim 29, Cidon teaches wherein one or more of said first value and said second value comprises a bandwidth (col. 2 lines 50-57) referenced by the bandwidths B_max and B_min. Cidon does not teach said target rate of communication is substantially equal to the inverse of said first value.

Gubbi teaches the rate of communication indicated by the time period is substantially equal to the inverse of the time period (Fig. 32, col. 37 lines 14-25) referenced by the Dynamic Bandwidth Request including Total Bandwidth Request 321 in bytes per second corresponding to the Latency Request.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the Dynamic Bandwidth Request message of Gubbi to the bandwidth reservation method of Cidon for the purpose of dynamically negotiating for the priority bandwidth and the retransmission parameters for each stream separately to optimize network capacity as suggested by Gubbi (col. 6 lines 7-11).

Claim 33, Cidon teaches a method of bandwidth reservation using bandwidth B_max values between link entities. Cidon does not teach the rate value is a time between communications transmitted from the first network node to the second network node.

Gubbi teaches a rate value is a time between communications transmitted from the first network node to the second network node (Fig. 32, col. 37 lines 14-25) referenced by the Dynamic Bandwidth Request including a Latency Request 322 expressed in Time Unit microseconds.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the Dynamic Bandwidth Request message of Gubbi to the bandwidth reservation method of Cidon for the purpose of dynamically negotiating for the priority bandwidth and the retransmission parameters for each stream separately to optimize network capacity as suggested by Gubbi (col. 6 lines 7-11).

Claim 34, Cidon teaches decreasing a rate value (col. 3 lines 38-48) referenced by the replacement of the B_max value by the lower B_maxn1 value in the bandwidth request packet. Cidon does not teach said decreasing comprises increasing said time between communications.

Gubbi teaches decreasing rate value comprises increasing a time between communications (Fig. 32, col. 37 lines 14-25) referenced by the Dynamic Bandwidth Request including a Latency Request 322 expressed in Time Unit microseconds which is the inverse of the BW Req 321 expressed in bytes/second such that a decrease in BW results in an increase in latency.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the Dynamic Bandwidth Request message of Gubbi to the bandwidth reservation method of Cidon for the purpose of dynamically negotiating for the priority bandwidth and the retransmission parameters for each stream separately to optimize network capacity as suggested by Gubbi (col. 6 lines 7-11).

Claim 59, Cidon teaches said value comprises a bandwidth (col. 2 lines 50-57) referenced by the bandwidths B_max and B_min. Cidon does not teach a time period representing a delay between communication transmission from said first entity toward said second entity.

Gubbi teaches a time period representing a delay between communication transmission from said first entity toward said second entity on a channel (Fig. 32, col. 37 lines 14-25) referenced by the Dynamic Bandwidth Request including the Latency Request 322 in Time Units of seconds which represents a time delay between communications, the apparatus further comprising an inverter configured to invert said time period (Fig. 32, col. 37 lines 14-25) referenced by the use of Bandwidth Request 321 in bytes/sec which is an inversion of the Latency Request in seconds which is obtained through an inversion calculation, wherein said target bandwidth is substantially equal to said inverted time period (Fig. 32, col. 37 lines 14-25) referenced by the use of Bandwidth Request 321 in bytes/sec which is an inversion of the Latency Request.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the Dynamic Bandwidth Request message of Gubbi to the bandwidth reservation method of Cidon for the purpose of dynamically negotiating for the priority bandwidth and the retransmission parameters for each stream separately to optimize network capacity as suggested by Gubbi (col. 6 lines 7-11).

Claim 60, Cidon teaches further comprising an adder configured to add said target bandwidth of said communication to a target bandwidth of a previous communication on

a different channel to calculate a total allocated bandwidth (Fig. 7, col 10 lines 25-42) referenced by the Compare Request With Available Resources Step 726 wherein the Node must add the prior assignment of bandwidth of different channels to determine the current available resources with the addition of the requested bandwidth B_max to determine if total resources are exceeded.

Claim 61, Cidon teaches wherein said available bandwidth is substantially equal to a maximum bandwidth of said port minus said total allocated bandwidth (col. 3 lines 38-48, Fig. 7, col 10 lines 25-42) referenced by the Compare Request With Available Resources Step 726 wherein the available resources represent the total current available bandwidth with the determination if Available Resource >= Request then the Decrease Available Resource By Request Step 726 is performed.

Claims 12, 31, 42, 43, 45, 48, 49, 51, 52, 54, 55 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cidon as applied to claim 32 above, in view of Heatwole et al. (Patent No. US 6937580).

Claim 12, Cidon teaches a method of dynamically controlling the rate of communication between two entities (Abstract lines 1-8) referenced by the bandwidth reservation between a source node and a destination node, the method comprising receiving an

electronic communication (col. 2 lines 8-13) referenced by the transmission of a request packet from a source node to a destination node, for a first channel between a first entity and a second entity (Fig. 1, col. 2 lines 50-67, col. 3 lines 1-22) referenced by the Automatic Network Routing link 5 between Node 0 and Node 3, at a relay element situated between the first entity and the second entity (Fig. 1, col. 3 lines 23-37) referenced by intermediate Node 1 located between Node 0 and Node 3, retrieving from said communication a first value associated with a first target bandwidth for said first channel (Fig. 1, Fig. 2B, Fig. 3A) referenced by the Bandwidth Allocation Device receiving the bandwidth B_max value, determining whether said relay element can provide said first target bandwidth for said first channel (col. 3 lines 38-48) referenced by the determination if the ANR link 5 can support a bandwidth greater than B_min but less thatn B_max, and modifying said first value in said communication if said relay element cannot provide said first target bandwidth for said channel (col. 33 lines 38-48) referenced by the BAD for outgoing ANR link 5 replacing the B_max in the reservation request packet with B_maxn1 wherein B_maxn1 is the maximum bandwidth of Node 1.
Cidon does not teach a computer readable storage medium storing instructions.
Heatwole teaches a computer readable storage medium storing instructions that when executed by a computer cause the computer to perform a method (Fig. 9, col. 15 lines 57-67, col. 16 lines 1-8) referenced by the computer system 901 with Main Memory 907 for storing information and instructions to be executed by Processor 905.
It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the bandwidth capacity apportioning system of Heatwole to the

bandwidth reservation method of Cidon for the purpose of enhancing efficient utilization of system capacity as suggested by Heatwole (col. 2 lines 11-12).

Claim 31, Cidon teaches a method of dynamically controlling the rate of communication between two entities (Abstract lines 1-8) referenced by the bandwidth reservation between a source node and a destination node, the method comprising generating at a first entity a first electronic communication for transmission to a second entity (col. 2 lines 8-13) referenced by the transmission of a request packet from a source node to a destination node, over a first communication channel (Fig. 1, col. 2 lines 50-67, col. 3 lines 1-22) referenced by the Automatic Network Routing link 5 between Node 0 and Node 3, wherein said first communication includes a first value indicating a target rate of communication for said channel (Fig. 3A, col. 6 lines 32-50) referenced by the bandwidth request packet the bandwidth B_max value for Automatic Network Routing link 5, receiving said first communication at a switching element (Fig. 2B) referenced by Node 1 receiving the bandwidth request packet at ANR 5, determining whether said switching element can provide said target rate of communication for said first channel (col. 3 lines 38-48) referenced by the determination if the ANR link 5 can support a bandwidth greater than B_min but less thatn B_max, if said switching element cannot provide said target rate of communication (col. 3 lines 38-48) referenced by the determination if the ANR link 5 can support a bandwidth greater than B_min but less thatn B_max, altering said first value to indicate a lower target rate of communication for said first channel (col. 3 lines 38-48) referenced by the BAD for outgoing ANR link 5

replacing the B_max in the reservation request packet with B_maxn1 wherein B_maxn1 is the maximum bandwidth of Node 1, receiving said first communication at said second entity (Fig. 1, col. 5 lines 57-67, col. 6 lines 1-7) referenced by the bandwidth request packet arriving at Node 3, and communicating said first value to said first entity (Fig. 3I, col. 6 lines 1-7) referenced by the bandwidth reply packet with a B_max value sent back to Node 0. Cidon does not teach a computer readable storage medium storing instructions.

Heatwole teaches a computer readable storage medium storing instructions that when executed by a computer cause the computer to perform a method (Fig. 9, col. 15 lines 57-67, col. 16 lines 1-8) referenced by the computer system 901 with Main Memory 907 for storing information and instructions to be executed by Processor 905.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the bandwidth capacity apportioning system of Heatwole to the bandwidth reservation method of Cidon for the purpose of enhancing efficient utilization of system capacity as suggested by Heatwole (col. 2 lines 11-12).

Claim 42, Cidon teaches an intermediate node for bandwidth reservation. Cidon does not teach the intermediate node is a router.

Heatwole teaches an intermediate node is a router (Fig. 1, col. 4 lines 50-57) referenced by the use of a multi-port router.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the bandwidth capacity apportioning system of Heatwole to the

bandwidth reservation method of Cidon for the purpose of enhancing efficient utilization of system capacity as suggested by Heatwole (col. 2 lines 11-12).

Claim 43, Cidon teaches an intermediate node for bandwidth reservation. Cidon does not teach the intermediate node is a hub.

Heatwole teaches an intermediate node is a hub (Fig. 2, col. 5 lines 62-65) referenced by the use of a hub 201 for communication with terminals.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the bandwidth capacity apportioning system of Heatwole to the bandwidth reservation method of Cidon for the purpose of enhancing efficient utilization of system capacity as suggested by Heatwole (col. 2 lines 11-12).

Claim 45, Cidon teaches an intermediate node for bandwidth reservation. Cidon does not teach the intermediate node is a repeater.

Heatwole teaches an intermediate node is a repeater (Fig. 2, col. 5 lines 62-65) referenced by the use of a hub 201 for signal amplification of communications with terminals.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the bandwidth capacity apportioning system of Heatwole to the bandwidth reservation method of Cidon for the purpose of enhancing efficient utilization of system capacity as suggested by Heatwole (col. 2 lines 11-12).

Claim 48, Cidon teaches an intermediate node for bandwidth reservation. Cidon does not teach the intermediate node is a communication bus.

Heatwole teaches an intermediate node is a communication bus (Fig. 9, col. 15 lines 57-67) referenced by the use of a Bus 903 within the computer system 901.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the bandwidth capacity apportioning system of Heatwole to the bandwidth reservation method of Cidon for the purpose of enhancing efficient utilization of system capacity as suggested by Heatwole (col. 2 lines 11-12).

Claim 49, Cidon teaches a method of controlling a network communication rate (Abstract lines 1-8) referenced by the bandwidth reservation between a source node and a destination node, the method comprising receiving at an intermediate node coupling a first network node and a second network node (Fig. 1, col. 2 lines 8-13 lines 50-60) referenced by the transmission of a request packet from a source node Node 0 to a destination node Node 3 via intermediate node Node 1, a rate value representing a rate of communication between the first network node and the second network node (Fig. 1, Fig. 2B, Fig. 3A) referenced by the Bandwidth Allocation Device receiving the bandwidth B_max value, and if the intermediate node cannot conduct communications between the first network node and the second network node at said rate value (col. 3 lines 38-48) referenced by the determination if the ANR link 5 can support a bandwidth greater than B_min but less thatn B_max, decreasing said rate value such that the intermediate node can conduct communications between the first network node and the

second network node at said rate value (col. 33 lines 38-48) referenced by the BAD for outgoing ANR link 5 replacing the B_max in the reservation request packet with B_maxn1 wherein B_maxn1 is the maximum bandwidth of Node 1. Cidon does not teach a computer readable storage medium storing instructions.

Heatwole teaches a computer readable storage medium storing instructions that when executed by a computer cause the computer to perform a method (Fig. 9, col. 15 lines 57-67, col. 16 lines 1-8) referenced by the computer system 901 with Main Memory 907 for storing information and instructions to be executed by Processor 905.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the bandwidth capacity apportioning system of Heatwole to the bandwidth reservation method of Cidon for the purpose of enhancing efficient utilization of system capacity as suggested by Heatwole (col. 2 lines 11-12).

Claim 51, Cidon teaches a method of controlling a network traffic rate (Abstract lines 1-8) referenced by the bandwidth reservation between a source node and a destination node, comprising sending a rate value from a first network node toward a second network node (Abstract lines 1-8, Fig. 3A, col. 6 lines 32-50) referenced by the bandwidth request packet sent from the source node to the destination node which includes the bandwidth B_max value, wherein said rate value represents a rate of traffic between the first network node and the second network node (Abstract lines 1-8, Fig. 3A, col. 6 lines 32-50) referenced by the bandwidth request packet sent from the source node to the destination node which includes the bandwidth B_max value, at one or

more intermediate nodes between the fist network node and the second network node (Fig. 1, col. 2 lines 50-60) referenced by intermediate nodes Node 1 and Node 2 between source node Node 0 and destination node Node 3, receiving said rate value (Fig. 2B) referenced by Node 1 receiving the bandwidth request packet at ANR 5, if the intermediate node cannot communicate traffic between the first network node and the second network node at said rate value (col. 3 lines 38-48) referenced by the determination if ANR link 5 can support the bandwidth B_max value, decreasing said rate value to a value at which the intermediate node can communicate traffic between the first network node and the second network node (col. 3 lines 38-48) referenced by the BAD for ANR link 5 replacing the B_max in the reservation request packet with B_maxn1 wherein B_maxn1 is the maximum bandwidth of Node 1 for ANR link 5, forwarding said rate value toward the second network node (col. 3 lines 38-48) referenced by the passing of the reservation request packet to forward on the path, and communicating between the first network node and the second network node at said rate value (col. 9 lines 23-40) referenced by the bandwidth reply packet back to the source node Node 0 to establish the bandwidth B_max value between Node 0 and Node 3 throughout the paths. Cidon does not teach a computer readable storage medium storing instructions.

Heatwole teaches a computer readable storage medium storing instructions that when executed by a computer cause the computer to perform a method (Fig. 9, col. 15 lines 57-67, col. 16 lines 1-8) referenced by the computer system 901 with Main Memory 907 for storing information and instructions to be executed by Processor 905.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the bandwidth capacity apportioning system of Heatwole to the bandwidth reservation method of Cidon for the purpose of enhancing efficient utilization of system capacity as suggested by Heatwole (col. 2 lines 11-12).

Claim 52, Cidon teaches a data structure configured to indicate a rate of communication over a communication channel (Fig. 3A, col. 6 lines 32-50) referenced by the bandwidth request packet including seven element bandwidth B_max and first element link ANR 5, the data structure comprising a header portion (Fig. 3A, col. 6 lines 32-50) referenced by the bandwidth request packet, comprising an identifier of an originator of said data structure (Fig. 3B, col. 6 lines 32-60) referenced by the fifth element of the Source address BB, an identifier of a destination of said data structure (Fig. 3B, col. 6 lines 32-60) referenced by the third element of the Destination address AA, and a first value corresponding to a target rate of communication between said originator and said destination (Fig. 3B, col. 6 lines 32-60) referenced by the eighth element bandwidth B_max=B_0, wherein said first value is modifiable during transmission of said data structure from said originator to said destination (col. 3 lines 38-48) referenced by the replacement of B_max by B_maxn1 which is the bandwidth supported by Node 1 for ANR 5. Cidon does not teach a computer readable storage medium.

Heatwole teaches a computer readable storage medium (Fig. 9, col. 15 lines 57-67, col. 16 lines 1-8) referenced by the computer system 901 with Main Memory 907 for storing information and instructions to be executed by Processor 905.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the bandwidth capacity apportioning system of Heatwole to the bandwidth reservation method of Cidon for the purpose of enhancing efficient utilization of system capacity as suggested by Heatwole (col. 2 lines 11-12).

Claim 54, Cidon teaches a data structure further comprising a data portion comprising a set of data (Fig. 3D, col. 7 lines 22-29) referenced by the second element data $$.

Claim 55, Cidon teaches said header portion of said data structure further comprising a second value corresponding to a requested rate of communication between said originator and said destination (Fig. 3A, col. 6 lines 32-50) referenced by the eighth element bandwidth B_min=B0/3 .

Claim 40, 44, 46 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cidon as applied to claim 32 above, in view of Gasbarro et al. (Pub No. US 2002/0071450 A1).

Claim 40, Cidon teaches an intermediate packet switched node. Cidon does not teach the intermediate node is InfiniBand compliant.

Gasbarro teaches a node is InfiniBand compliant (Fig. 6, page 2 para. [0013]) referenced by the computer host system using InfiniBand architectures.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the bandwidth-optimizing host fabric adaptor of Gasbarro to the bandwidth reservation method of Cidon for the purpose of maximizing memory bandwidth access performance of a memory architecture while occupying minimal memory area as suggested by Gasbarro (page 1 para. [0006]).

Claim 44, Cidon teaches an intermediate node. Cidon does not teach the intermediate node is a bridge.

Gasbarro teaches a node is a bridge (Fig. 4A, page 4 para. [0039]) referenced by the I/O bridge 208 function of the Host node 130.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the bandwidth-optimizing host fabric adaptor of Gasbarro to the bandwidth reservation method of Cidon for the purpose of maximizing memory bandwidth access performance of a memory architecture while occupying minimal memory area as suggested by Gasbarro (page 1 para. [0006]).

Claim 46, Cidon teaches an intermediate node. Cidon does not teach the intermediate node is a network adapter.

Gasbarro teaches a node is a network adapter (Fig. 5, Abstract lines 1-7) referenced by Host Fabric Adapter 120A of the Host System 500.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the bandwidth-optimizing host fabric adaptor of Gasbarro to

the bandwidth reservation method of Cidon for the purpose of maximizing memory bandwidth access performance of a memory architecture while occupying minimal memory area as suggested by Gasbarro (page 1 para. [0006]).

3. Claim 53 is rejected under 35 U.S.C. 103(a) as being unpatentable over Cidon and Heatwole as applied to claim 52 above, and further in view of Gubbi.

Claim 53, Cidon and Heatwole teach a computer readable storage medium containing a data structure. Cidon teaches wherein said first value of said header portion of said data structure comprises a target rate of communication (Fig. 3B, col. 6 lines 32-60) referenced by the eighth element bandwidth B_max=B_0. Cidon and Heatwole do not teach a time period and said target rate of communication is substantially equal to the inverse of said time period.

Gubbi teaches the rate of communication indicated by the time period is substantially equal to the inverse of the time period (Fig. 32, col. 37 lines 14-25) referenced by the Dynamic Bandwidth Request including Total Bandwidth Request 321 in bytes per second corresponding to the Latency Request.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the Dynamic Bandwidth Request message of Gubbi to the bandwidth reservation method of Cidon and Heatwole for the purpose of dynamically

negotiating for the priority bandwidth and the retransmission parameters for each stream separately to optimize network capacity as suggested by Gubbi (col. 6 lines 7-11).

Allowable Subject Matter

4. Claim 25 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Citation of Prior Art

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Patent No. 6876668, Chawla et al. discloses an apparatus and methods for dynamic bandwidth allocation. Patent No. 6327254, Chuah discloses a method for bandwidth sharing in a multiple access system for communications networks.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John L. Shew whose telephone number is 571-272-3137. The examiner can normally be reached on 8:30am - 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wellington Chin can be reached on 571-272-3134. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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